October 3, 2003

Mr. Mark E. Warner, Site Vice President
c/o James M. Peschel
Seabrook Station
PO Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT RE: CHANGES TO TECHNICAL SPECIFICATIONS ASSOCIATED WITH CONTAINMENT BUILDING PENETRATIONS (TAC NO. MB6611)

Dear Mr. Warner:

The U.S. Nuclear Regulatory Commission (NRC or the Commission) has issued the enclosed Amendment No. 94 to Facility Operating License No. NPF-86 for the Seabrook Station, Unit No. 1, in response to your application dated October 11, 2002, filed by North Atlantic Energy Service Corporation (NAESCO) as the then licensee for Seabrook Station, Unit No. 1. On November 1, 2002, the NRC approved the transfer of the license for Seabrook Station, to the extent held by NAESCO, and certain co-owners of the facility, on whose behalf NAESCO was also acting, to FPL Energy Seabrook, LLC (FPLE Seabrook). By letter dated December 20, 2002, FPLE Seabrook requested that the NRC continue to review and act upon all requests before the Commission that had been submitted by NAESCO. Supplemental letters to the original application dated May 30, 2003 (two letters), July 16, 2003, August 18, 2003, September 9, 2003, and September 15, 2003, were submitted by FPLE Seabrook.

The amendment revises Technical Specification (TS) 3/4.9.4, “Containment Building Penetrations,” to permit the equipment hatch to be open during core alterations and/or during movement of irradiated fuel assemblies within containment. Specifically, the applicability of the TS would be modified to apply only to the movement of recently irradiated fuel assemblies. Recently irradiated fuel assemblies would be described in the bases as fuel that has occupied part of a critical reactor core within the past 80 hours.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Victor Nerses, Senior Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosures: 1. Amendment No. 94 to NPF-86
2. Safety Evaluation

cc w/encls: See next page

Seabrook Station, Unit No. 1

cc:

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A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/

Victor Nerses, Senior Project Manager, Section 2
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Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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PUBLIC	PDI-2 R/F	CHolden	JClifford	VNerses	CRaynor (2)
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ADAMS Accession Numbers: ML032740512

Package: ML

TS(s): ML **SE input provided - no major changes *See previous concurrence

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FPL ENERGY SEABROOK, LLC, ET AL.*

DOCKET NO. 50-443

SEABROOK STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 94
License No. NPF-86

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by FPL Energy Seabrook, LLC, et al. (the licensee), dated October 11, 2002, as supplemented May 30, 2003 (two letters), July 16, 2003, August 18, 2003, September 9, 2003, and September 15, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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*FPL Energy Seabrook, LLC (FPLE Seabrook), is authorized to act as agent for the: Hudson Light & Power Department, Massachusetts Municipal Wholesale Electric Company, and Taunton Municipal Light Plant and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

2. Accordingly, the license is amended by changes to paragraph 2.J of Facility Operating License No. NPF-86 and is hereby amended to read as follows:

   J. Additional Conditions

   The Additional Conditions contained in Appendix C, as revised through Amendment No. 94, are hereby incorporated into this license. FPLE Seabrook, LLC shall operate the facility in accordance with the Additional Conditions.

3. In addition, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-86 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 94, and the Environmental Protection Plan contained in Appendix B are incorporated into Facility License No. NPF-86. FPLE Seabrook shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

4. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachments: 1. Page 7 of License*
No. NPF-86
2. Changes to the
Technical Specifications
3. Page 1 of Appendix C

Date of Issuance: October 3, 2003

* Page 7 of the license and page 1 of Appendix C are attached, for convenience, for the composite license to reflect this change.

ATTACHMENT TO LICENSE AMENDMENT NO. 94

FACILITY OPERATING LICENSE NO. NPF-86

DOCKET NO. 50-443

Replace the following page of the Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the area of change.

Remove	Insert
Page 7	Page 7

Replace the following pages of Appendix A, Technical Specifications, with the attached revised pages as indicated. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

Remove	Insert
3/4 9-4	3/4 9-4
B 3/4 9-2a	B 3/4 9-2a
----------	B 3/4 9-2b

Replace the following page of Appendix C, Additional Conditions, with the attached revised page as indicated. The revised page is identified by amendment number and contains marginal lines indicating the area of change.

Remove	Insert
Page 1	Page 1

J. Additional Conditions

The Additional Conditions contained in Appendix C, as revised through Amendment No. 94, are hereby incorporated into this license. FPL Energy Seabrook, LLC, shall operate the facility in accordance with the Additional Conditions.

3. This License is effective as of the date of issuance and shall expire at midnight on October 17, 2026.

FOR THE NUCLEAR REGULATORY COMMISSION

(Original signed by:
Thomas E. Murley)

Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

Attachments/Appendices:
1. Appendix A - Technical Specifications (NUREG-1386)
2. Appendix B - Environmental Protection Plan
3. Appendix C - Additional Conditions

Date of Issuance: March 15, 1990

APPENDIX C

ADDITIONAL CONDITIONS
OPERATING LICENSE NO. NPF-86

FPL Energy Seabrook, LLC, shall comply with the following conditions on the schedules noted below:

Amendment Number	Additional Condition	Implementation Date
50	NAESCO is authorized to relocate certain technical specification requirements to licensee-controlled documents. Implementation of this amendment shall include the relocation of these technical specification requirements to the appropriate documents, as described in the licensee's application dated October 17, 1996, and evaluated in the staff's Safety Evaluation attached to this amendment.	The amendment shall be implemented within 60 days from March 12, 1997
94	FPLE Seabrook, LLC must maintain a program in effect to control the administration of potassium iodide (KI) to Control Room personnel during core alterations when the Primary Containment Equipment Hatch is open. This program will remain in effect until the current licensing basis for unfiltered inleakage is revised.	The amendment shall be implemented within 60 days from October 3, 2003.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 94 TO FACILITY OPERATING LICENSE NO. NPF-86

FPL ENERGY SEABROOK, LLC

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

1.0 INTRODUCTION

By letter dated October 11, 2002 the North Atlantic Energy Service Corporation (NAESCO), as the then licensee for Seabrook Station, Unit No.1 (Seabrook), submitted information and requested Technical Specification (TS) changes to permit the equipment hatch to be open during certain specific plant evolutions. On November 1, 2002, the U.S. Nuclear Regulatory Commission (NRC or the Commission) approved the transfer of the license for Seabrook, to the extent held by NAESCO, and certain co-owners of the facility on whose behalf NAESCO was also acting, to FPL Energy Seabrook, LLC (FPLE Seabrook or licensee). By letter dated December 20, 2002, FPLE Seabrook requested that the NRC continue to review and act upon all requests before the Commission that had been submitted by NAESCO. Additional information was submitted in the licensee's supplemental letters dated May 30, 2003 (two letters), July 16, 2003, August 18, 2003, September 9, 2003, and September 15, 2003. The supplemental letters clarified the application, and did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on November 26, 2002 (67 FR 70766).

The licensee requested approval to revise TS 3/4.9.4, "Containment Building Penetrations," to permit the equipment hatch to be open during core alterations and during movement of irradiated fuel assemblies within containment. Specifically, the applicability of the TS would be modified to apply only to the movement of recently irradiated fuel assemblies. Recently irradiated fuel assemblies would be described in the bases as fuel that has occupied part of a critical reactor core within the past 80 hours.

The licensee used the NRC-approved Technical Specification Task Force (TSTF)-51 as the model for its requested changes.

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 100, Section 11(a)(1) requires that the licensee's facility be sited at a location such that the licensee is able to maintain the dose to an individual located at the exclusion area boundary (EAB) for two hours immediately following

the onset of a postulated fission product release below 25 rem whole body and below 300 rem to the thyroid from iodine. Additionally, 10 CFR 100.11(a)(2) requires that the licensee's facility be sited at a location such that it is able to maintain the dose to an individual below 25 rem whole body and below 300 rem to the thyroid from iodine, given that the individual is located at the outer boundary of the low population zone (LPZ) for the duration of exposure to the radioactive release.

General Design Criterion (GDC) 19 "Control Room" states, in part:

> A control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss of coolant accidents. Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident.

The staff used the following guidance in its evaluation of the licensee's proposed change:

- Safety Guide 1.25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors"

- Standard Review Plan (SRP) Section 15.7.4, "Radiological Consequences of Fuel Handling Accidents"

- SRP Section 6.4, "Control Room Habitability System"

- Regulatory Guide (RG) 1.194, "Atmospheric Relative Concentrations for Control Room Radiological Habitability Assessments at Nuclear Power Plants"

- Technical Specification Task Force Traveler TSTF-51, Revision 2. Approved by the NRC by letter dated October 13, 1999

- The model TS contained in the improved standard technical specifications, NUREG-1431, Revision 2, "Standard Technical Specifications, Westinghouse Plants"

3.0 TECHNICAL EVALUATION

3.1 Containment Closure

The licensee, consistent with TSTF-51, proposed modifications to the TS by revising the APPLICABILITY statements for shutdown conditions for containment and systems previously used to mitigate the consequences of an Fuel Handling Accident (FHA). The APPLICABILITY statement for TS 3/4.9.4 was revised as follows:

- Delete "During Core Alteration" from TS 3/4.9.4, and

- Modify the current APPLICABILITY of TS 3/4.9.4 to state the following "During movement of recently irradiated fuel within containment."

In order to implement the above APPLICABILITY statements, the Limiting Conditions for Operation (LCO) for INTEGRITY and for the selected engineered safety feature (ESF) systems need only apply when handling fuel that has recently been in the critical reactor core (i.e., "recently irradiated fuel"). The TS Bases would be revised to identify "recently irradiated fuel" as fuel that has occupied part of a critical reactor core within the previous 80 hours. This change would allow the movement of fuel that has decayed for greater than 80 hours while the containment equipment hatch is open. The licensee's FHA analysis (as discussed below) shows that for an accident with the equipment hatch open after 80 hours decay time, the doses will remain within 10 CFR Part 100 and GDC 19 limits.

Although containment closure is not credited in the radiological consequences analysis of a FHA inside the containment, Seabrook states that it will implement additional controls as a defense in depth measure. In its submittal, and May 30, 2003 supplement, the licensee states that a containment outage door may be installed as an alternative to installing the containment equipment hatch with a minimum of four bolts. The containment outage door is designed to provide appropriate confinement of a radioactive release due to an FHA with the containment equipment hatch removed. The containment outage door will be installed and capable of being closed within one hour of an FHA. The licensee will implement additional controls to ensure this capability. These measures include a designated individual in direct communication with the control room who has responsibility for quick closure of the containment outage door. Additionally, there would be means to allow safe, quick disconnection or severance of hoses and cables being run through the doorway.

Consistent with the instructions in TSTF-51, Revision 2, regarding decreasing dose even further below that provided by natural decay, the licensee has committed, in its supplemental letter dated May 30, 2003, to follow the guidelines of NUMARC 93-01, Revision 3, Section 11.3.6, "Assessment Methods for Shutdown Conditions," Subsection 5, "Containment - Primary (PWR)/Secondary (BWR)." The staff agrees with the licensee's use of this NUMARC document and finds the use of TSTF-51 to be acceptable.

3.2 FHA Inside the Open Containment

The licensee revised the design basis analysis of the FHA inside containment to account for the equipment hatch being open during fuel movement, which begins as soon as 80 hours after reactor shutdown. The revised analysis also used the thyroid dose conversion factors taken from International Commission on Radiological Protection Publication 30 (ICRP-30). The staff finds the use of ICRP-30 dose conversion factors to be acceptable as noted in NRC Regulatory Issue Summary 2001-19, "Deficiencies in the Documentation of Design Basis Radiological Analyses Submitted in Conjunction with License Amendment Requests," issued October 18, 2001.

The staff determined that the licensee generally followed guidance in Safety Guide 1.25 and SRP 15.7.4 in its development of the radiological consequences analysis of the FHA inside the open containment. The licensee followed its design basis as documented in the Seabrook Update Final Safety Analysis Report (UFSAR) with the exception of the decay time, dose conversion factors, and control room ventilation system operation. Leaving the equipment hatch open during irradiated fuel movement causes a different release pathway than was previously analyzed. The dispersion in the environment is important in the analysis of the control room operator dose because of the close distances between the release points and the

intake points into the control room. The staff's review of the licensee's atmospheric relative concentration (X/Q) values used for the offsite doses is discussed below, and for the control room dose analysis is discussed in Section 3.2.1.

The licensee's analysis assumed that 80 hours after reactor shutdown an irradiated fuel assembly with the highest rated gaseous fission product inventory is dropped within the flooded vessel during fuel movement and releases the gap activity from all the fuel rods in that assembly. The refueling pool water retains a portion of the iodine released, while all the noble gases are released to the containment atmosphere. The entire amount of radioactivity released from the water is released to the outside environment as a short duration puff release (a shorter duration than the standard 2 hours). The staff finds that the licensee used appropriately conservative assumptions in the offsite dose analysis. The licensee's assumptions for the FHA inside the open containment are given in Table 1.

SRP 15.7.4 acceptance criteria for offsite consequences of an FHA are that the doses at the EAB and LPZ are well within (defined as 25% or less) the 10 CFR 100.11 exposure guidelines of 25 rem whole body and 300 rem thyroid. Even though the licensee only reported the EAB dose, this bounds the LPZ dose for this analysis. Since the release duration is so short (within two hours), the only difference in analysis input assumptions between the EAB and LPZ dose is the X/Q value. Because the LPZ X/Q value used is less than that for the EAB, the LPZ dose results would be lower than that calculated for the EAB. The licensee's EAB dose results are less than the SRP 15.7.4 acceptance criteria. The LPZ dose results are bounded by the EAB dose results.

The licensee also analyzed the dose to the control room operators as a result of a design basis FHA in the open containment. The licensee used several assumptions that are changed from the previous licensing basis as documented in the Seabrook UFSAR. The analysis was revised to eliminate the initial period of control room filter bypass, to delay the initiation of control room recirculation filters for one hour and to use revised control room flow rates based on the worst case one fan operating condition. The licensee developed composite control room X/Q values to account for the radiation release being assumed to enter the control room by two pathways - unfiltered inleakage through the control room envelope boundary and control room ventilation system intake. The composite X/Q values weighted the base X/Q values for each receptor by the intake rate for that receptor, then summed the product over both receptors. The staff does not object to this formulation, but did not explicitly determine acceptability of the resulting composite value. Rather, the staff reviewed the base control room X/Q values for acceptability. With the exception of the control room unfiltered inleakage assumption of 1 cfm, the revised control room ventilation system assumptions are acceptable to the staff because they generally follow guidance in SRP 6.4. The licensee's analysis with the 1 cfm unfiltered inleakage assumption gives control room dose results which are within the GDC-19 dose limits of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident. SRP 6.4 further gives the dose guidelines as 5 rem whole body, 30 rem thyroid and 30 rem beta skin dose. Further discussion of the unfiltered inleakage assumption and the licensee's compensatory measures is provided below in Section 3.2.2.

The staff performed an independent analysis of the FHA inside the open containment, using the licensee's values and the regulatory guidance stated above in Section 2.0. The staff's analysis showed agreement with the licensee's EAB, LPZ, and control room dose values. Table 2 gives the licensee's analysis results.

3.2.1 Atmospheric Relative Concentration Estimates

The licensee used previously calculated licensing basis X/Q values listed in the Seabrook UFSAR. Estimates for the dose assessment described above are for the dual control room air intakes, assumed unfiltered inleakage through the control room vestibule door, and the EAB.

The control room X/Q calculations are based on an approximation to the Murphy-Campe methodology referenced in SRP Section 6.4, "Control Room Habitability System." The licensee used the diffuse release option that assumes the effluent release from the containment building occurs over many scattered locations on the containment wall. While such an assumption may be valid when the containment building is closed, this amendment will permit the equipment hatch to be open during refueling. Therefore, as a more reasonable assumption, the staff considers the release to the environment for this dose assessment should be assumed to occur from the open hatch door, not from many scattered locations on the containment wall. To assess this difference in assumptions, staff made comparison approximations using the ARCON96 methodology described in RG 1.194, "Atmospheric Relative Concentrations for Control Room Radiological Habitability Assessments at Nuclear Power Plants." This methodology implements an improved building wake algorithm. Although the staff does not agree with the licensee's assumption regarding the postulated location of release, the staff concludes that the X/Q values listed in Table 3 below, and used by the licensee in its dose assessment, are adequate for this specific case when compared with the staff approximations. The licensee calculated weighted X/Q values for the dual control room air intakes, assuming that both channels would perform continuously and simultaneously during the course of an accident to individually provide one-half of the needed air, and that air from at least one of the two intakes could be assumed to be uncontaminated. Therefore, for each time period, the licensee divided the higher of the two control room air intake X/Q values by a factor of two. Present NRC guidance in SRP 6.4 permits such a reduction in the X/Q values for dual intakes when the intakes are adequately separated to provide a low contamination intake and designed to meet single failure, seismic, flood, tornado, and hurricane criteria, as appropriate. The licensee will need to recalculate the weighted X/Q and dose values if the ratio of any of the input flow rates for the dual intakes and/or unfiltered inleakage changes with respect to the others.

The licensee used the previously-calculated licensing basis X/Q value as listed in the Seabrook UFSAR for the EAB dose calculation. The EAB X/Q value is independent of the containment personnel hatch being open and is also independent of the dual control room air intakes and the control room unfiltered inleakage rate assumptions. Given this consideration, the staff finds the licensee's use of the previously calculated EAB X/Q value to be acceptable.

3.2.2 Control Room Unfiltered Inleakage Assumption

The licensee used the current Seabrook licensing basis assumption of 1 cfm in its revised analysis. In light of recent testing and control room habitability work, 1 cfm is unlikely to be the value measured by testing, nor is it expected for actual accident conditions. Additionally, by the requested changes to the TS, there is the possibility of a larger radioactivity release than is currently analyzed. In the event of an FHA with fuel damage, fuel that has undergone less decay, and therefore has higher levels of some radioactive isotopes, would be released into a containment that would not be closed to the outside environment. The licensee has performed tracer gas testing of the control room envelope to support its response to Generic Letter

(GL) 2003-01, “Control Room Habitability”, dated June 12, 2003. As noted in the licensee’s letter dated September 15, 2003, until the results of this testing are incorporated into revised control room habitability analyses for design basis accidents (including FHA in containment, with the equipment hatch open), the licensee commits to reliance on a program to control the administration of potassium iodide (KI) to the control room personnel during core alterations when the primary containment equipment hatch is open. In particular the licensee stated:

> FPLE Seabrook commits to maintaining a program in effect to control the administration of potassium iodide (KI) to Control Room personnel during core alterations when the Primary Containment Equipment Hatch is open. This interim measure will remain in effect until the current license basis for unfiltered inleakage is revised.

The program controls administration of KI in the event of an accident in order to mitigate the radiological consequences of the FHA in containment. This is a temporary reliance on KI for mitigation, and will not be relied on in the future after the licensing basis is revised. The design basis analysis of the FHA in containment assumes that the gap activity of the entire fuel assembly is released within two hours directly to the environment. Experience thus far has shown that dropping fuel during fuel movement does not result in any measurable radioactive material release to the outside environment. Considering this conservatism, as well as other inherently conservative assumptions in the design basis analysis, the staff finds that the licensee’s temporary reliance on the administration of KI is acceptable to counteract the uncertainty in the dose to the control room operators due to the use of the unfiltered inleakage assumption of 1 cfm versus the measured value. The staff finds reasonable assurance that GDC-19 will continue to be met for an FHA with the containment open, considering the licensee’s commitment to have temporary compensatory measures to mitigate the dose in the control room.

3.3 Summary

As described above, the staff reviewed the assumptions, inputs, and methods used by FPLE Seabrook to assess the radiological impacts of allowing a shorter decay time before movement of irradiated fuel, and permitting the containment equipment hatch to be open during core alterations or movement of irradiated fuel at Seabrook. The staff finds that the licensee used analysis methods and assumptions consistent with the regulatory requirements and guidance identified in the Regulatory Evaluation, with the exception of the control room unfiltered inleakage assumption and with the exception of the licensee’s assumptions of containment release location for control room X/Q values. To address the containment release location issue, the staff performed an independent analysis, and concluded the dose values will remain within regulatory limits. To mitigate the consequences of an FHA to the control room operators, FPLE Seabrook committed to implement a program that will administer KI to counteract the uncertainty in the dose to the control room operators. The staff’s approval is predicated on the licensee’s commitment to implement a program to administer KI to counteract the uncertainty in the dose to the control room operators due to the use of the unfiltered inleakage assumption of 1 cfm versus the measured value in the radiological consequences analysis of an FHA in the open containment. The staff incorporated this commitment as a license condition. The license condition will remain in effect until the current licensing basis for unfiltered inleakage is revised. The staff finds that there is reasonable assurance that the licensee’s estimates of the EAB, LPZ, and control room doses will continue to comply with these criteria. Therefore, the proposed changes to TS 3/4.9.4 are acceptable.

FPL Energy Seabrook considered the dose to control room operators due to these FHAs. In its analyses, the licensee assumed that the control room unfiltered inleakage was 1 cfm, as currently in the design basis. At the time of the submittal, FPL Energy Seabrook had not performed integrated leakage testing to confirm this leakage value. On June 12, 2003, the staff issued GL 2003-01, "Control Room Habitability." This generic letter identifies staff concerns regarding the reliability of current surveillance testing to identify and quantify control room inleakage, and requests licensees to confirm the most limiting unfiltered inleakage into their control room envelope. FPL Energy Seabrook is required by the generic letter to respond to the information request within 180 days of its issue. However, this amendment was submitted prior to the issuance of the generic letter. The staff has determined that there is reasonable assurance that the Seabrook control room will be habitable during a DBA FHA and this amendment may be approved prior to the staff's review of the licensee's response to the generic letter. The staff bases this determination on (1) the relative magnitude of the release to the environment and the infiltration assumed in the licensee's analyses, (2) favorable site X/Q values, and (3) the initial and periodic testing and other actions already taken by the licensee- and (4) the licensee's commitment to have a program to administer KI in the event of an FHA with the containment equipment hatch open. The staff's approval of this amendment does not relieve FPL Energy Seabrook of addressing the information requests in GL 2003-01 and does not imply that the staff would necessarily find the analysis in this amendment acceptable as a response to information request 1(a) in GL 2003-01.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Hampshire and Massachusetts State officials were notified of the proposed issuance of the amendment. The State officials had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (67 FR 70766). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: L. Brown
R. Giardina
M. Hart

Date: October 3, 2003

Table 1

Fuel Handling Accident Analysis Assumptions

Reactor Power, MWt	3654
Radial Peaking Factor	1.65
Fuel Decay Period, hours	80
Number of Assemblies in Core	193
Number of Fuel Rods in an Assembly	264
Number of Damaged Rods	264
Fraction of Gap Activity Released from Damaged Rods	1.0
Fraction of Core Inventory in Gap	
Kr-85	0.3
Iodines and noble gases other than Kr-85	0.1
Pool Decontamination Factor, Effective	100
Iodine Species in Fuel Gap, %	
Elemental	99.75
Organic	0.25
Release Duration, hours	
From Containment	Instantaneous Puff
From Spent Fuel Pool	2
Assumed Release Point From Containment	Equipment Hatch
Atmospheric Dispersion, sec/m^3	
EAB,	Seabrook UFSAR Table 15B-4
LPZ,	Seabrook UFSAR Table 15B-5
Control Room	See Table 3
Control Room Volume, ft^3	2.46E+5
Control Room Emergency Flow, cfm	600
Control Room Emergency Recirculation Rate, cfm	500
Control Room Filter Efficiency, %	
Elemental	95
Organic	95
Aerosol	99
Control Room Unfiltered Inleakage, cfm	1

Table 2

Fuel Handling Accident Analysis Dose Results

FHA in Open Containment

80 hours decay time	EAB Dose (rem)		LPZ Dose (rem)		Control Room Dose (rem)		
	Whole Body	Thyroid	Whole Body	Thyroid	Whole Body	Skin	Thyroid
Licensee Results	2.2	69.6	NC*	NC	0.31	1.5	7.38
Acceptance Criteria	6	75	6	75	5	30	30

FHA in Spent Fuel Pool

80 hours decay time	EAB Dose (rem)		LPZ Dose (rem)		Control Room Dose (rem)		
	Whole Body	Thyroid	Whole Body	Thyroid	Whole Body	Skin	Thyroid
Licensee Results	0.17	4.4	0.08	2.1	0.11	1.5	0.55
Acceptance Criteria	6	75	6	75	5	30	30

*NC, not calculated

Table 3

Seabrook Relative Concentration (X/Q) Values

Postulated Release from Personnel Hatch to:

Time (hr)	Control Room Vestibule Door X/Q (sec/m^3)	Control Room Dual Air Intakes* X/Q (sec/m^3)
0 - 1	4.08 E-03	7.85 E-04
1 - 2	3.18 E-03	5.70 E-04
2 - 8	2.04 E-03	3.48 E-04
8 - 24	1.44 E-03	2.34 E-04
24 - 96	9.78 E-04	1.53 E-04
96 - 720	7.51 E-04	1.00 E-04

* All values for the control room dual air intakes are for the intake with the higher X/Q value, reduced by a factor of 2 as described above.